

**REMARKS**

Favorable consideration and allowance are respectfully requested for claims 40-46, 48-51 and 79-89 in view of the foregoing amendments and the following remarks.

The rejection of claims 40-46, 48-51, 79-89 under 35 U.S.C. § 112, first paragraph, as lacking adequate written description, is respectfully traversed. Claims 40, 48, 80, 81 and 83 are amended to delete the language relating to the decomposition rate. Accordingly, the objected-to language no longer appears in the claims.

With respect to claim 88, page 7, lines 21-24 of the specification as originally filed recite that preparing catalysts of alumina and nickel oxide in the presence of sulfuric acid yields a catalyst with higher activity than a catalyst without sulfuric acid. Page 7, at lines 8-10 also recites that “addition of sulfuric acid is preferable during the catalyst preparation.” Sulfate is a conjugate base of hydrogen sulfate which itself is a conjugate base of sulfuric acid. Given this relationship, and the preparatory processes to create the final catalyst, a person of skill in the art would readily expect sulfate ions to be present in a catalyst of alumina and nickel oxide which is formed in the presence of sulfuric acid. Thus, when viewed from the perspective of a person of skill in the art, the specification adequately conveyed that the catalyst comprises sulfate. Indeed, a specific example is also provided, as noted in the recent Office Action, where a catalyst with a sulfate ion is provided. The examples are provided to illustrate the invention, not to limit it. Given this example alone, a person of skill in the art

would appreciate that the Applicants contemplated a *class* of catalysts that includes a sulfate ion. Thus, claim 88 is believed to be adequately supported by the present specification.

Accordingly, reconsideration and withdrawal of these rejections are respectfully requested.

The rejection of claims 40-43, 45, 46, 48, 49, 51 and 79-86 under 35 U.S.C. § 103(a) over Rossin et al. (6,069,291) in view of Okazaki et al. (5,151,263) and Imamura (5,649,985), is respectfully traversed.

Claims 40, 80, 81 and 83 are amended to recite the step of adding nitrogen. Claim 48 is amended to recite that nitrogen is present. Support for these amendments may be found in the application as originally filed, for instance in figure 1, which shows the addition of N<sub>2</sub>. The related text, on page 15, at line 22, describes that the chamber is flushed with N<sub>2</sub> gas. Further, the specification describes adding nitrogen, for instance in Example 9, on page 39, and Example 11, on page 40, describe diluting with nitrogen.

The addition of nitrogen gas provides a number of benefits to the inventive process:

- the overall oxygen content of the reaction atmosphere is reduced, given the additional ambient nitrogen;
- as a result of the reduced oxygen content in the reaction atmosphere (when compared with air), the instance and likelihood of decomposition by combustion is reduced;

- similarly, the likelihood of an oxidative decomposition is reduced, as a result of the reduced oxygen content, and a hydrolysis reaction is more likely to proceed.

The Rossin reference relates to a process where PFC gases are decomposed in air. As explained above, this is significantly different from the invention as presently claimed, where the addition of nitrogen results in a reduced oxygen content and affords benefits including reducing the likelihood of combustion and oxidative decomposition. In accordance with the presently claimed method the desired hydrolysis reaction is much more likely to proceed because the ambient gas is not air. Rossin, on the other hand, relate to a reactive process that takes place in the presence of air. Thus, Rossin fails to teach or suggest each and every limitation of the present claims.

Similarly, the secondary references, Imamura and Okazaki, do make up for the failure of Rossin to teach or suggest the presently claimed invention.

The Okazaki reference is offered as teaching absorption and neutralization by alkali. This reference does not make up for the failure of Rossin to teach the claim limitations discussed above.

The Imamura reference is offered as teaching that HF is water soluble and can be removed by scrubbing with water. This reference does not make up for the failure of Rossin to teach the claim limitations discussed above.

Accordingly, the proposed combination of reference fails to teach or suggest each and every claim limitation and reconsideration and withdrawal of this rejection are respectfully requested.

The rejection of claims 44, 50 and 87-89 under 35 U.S.C. § 103(a) over Rossin, in view of Imamura or Okazaki and further in view of Rosenbaum (5,460,792), is respectfully traversed.

The Rossin, Imamura and Okazaki references are discussed above. The Rosenbaum reference is offered as suggesting including zinc in the catalysts of Rossin '291, as Rosenbaum allegedly teaches destroying halogenated compounds using a catalyst doped with any of a variety of compounds including zinc oxide. The Rosenbaum reference does not make up for the failure of Rossin to teach the claim limitations discussed above.

Accordingly, the proposed combination of reference fails to teach or suggest each and every claim limitation and reconsideration and withdrawal of this rejection are respectfully requested.

Applicants also respectfully request reconsideration of the previously-submitted evidence of unexpected superior results. As discussed in the most recently filed, that of December 14, 2006, the data in Figure 6 of the Specification and the two Kanno declarations, in combination, shows that Al/Ni catalysts were superior in terms of achieving a high reduction rate when the starting CF concentration was 5,000 pm or higher, and maintaining the high reduction rate for a longer period of time than catalysts containing other elements. This evidence is believed satisfactory to overcome the obviousness assertion.

## CONCLUSION

In view of the foregoing, the application is respectfully submitted to be in condition for allowance, and prompt favorable action thereon is earnestly solicited.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

Although a petition for an Extension of Time is submitted herewith, if necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket No. 056203.50311).

Respectfully submitted,

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/ Christopher T. McWhinney /

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James F. McKeown  
Registration No. 25,406

Christopher T. McWhinney  
Registration No. 42,875

CROWELL & MORING LLP  
Intellectual Property Group  
P.O. Box 14300  
Washington, DC 20044-4300  
Telephone No.: (202) 624-2500  
Facsimile No.: (202) 628-8844  
JFM:CTM:gtm  
3908312\_1